



**Conference Notes**  
**“The Future Ain’t What it Used to Be:**  
**Planning for Climate Disruption”**

**Summary of Forestry Sector Breakout Session**

**October 27, 2005**  
**Qwest Field Conference Center**  
**Seattle, Washington**  
**Sponsored by King County**

**Report prepared by Carrie Lee**

Information on the conference is available at:  
<http://metrokc.gov/climateconference2005>

## Forestry Sector Steering Committee

Name, Affiliation, **Co-chair**

Name, Affiliation, **Co-chair**

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**“The Future Ain’t What it Used to Be: Planning for Climate Disruption”**  
**October 27, 2005**  
**Seattle, Washington**

**Summary of Forestry Sector Breakout Session**

On Thursday, October 27, 2005, King County hosted a one day meeting to engage a broad cross-section of Washington State governments, businesses, tribes, farmers, non-profits, and the community-at-large in a dialogue about climate change impacts and potential adaptations in Washington State. The following is a summary of the Forestry Sector breakout group presentations and discussion. More information on the meeting, including electronic copies of the breakout group presentations, is available at:

<http://metrokc.gov/climateconference2005>.

The Forestry Sector breakout session included a morning session where problems facing the forestry sector as a consequence of climate change were outlined by speakers from the University of Washington, Stanford University, and Environmental Resources Trust. In the afternoon, a panel discussion with the speakers was moderated by Janice Peterson and Dave Peterson of the U.S. Forest Service addressing preparation and adaptation strategies for the forestry sector.

The Forestry Sector breakout session identified the following three priorities in their afternoon report to the plenary:

- Retain as much forested land as possible.
- Manage forest ecosystems for resilience.
- Enhance links between science and management.

***Participants***

The forestry sector breakout group attracted over 75 participants including representatives from the timber industry, environmental consulting firms, environmental advocacy groups, the general public and natural resource managers from city, state, and federal governments.

***Summary of Morning Session***

<b><i>Presentations</i></b>
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*Tom Hinckley, University of Washington, “Individual Trees Under Global Climate Change”*

Although elevated levels of carbon dioxide provide the potential to increase tree productivity, studies suggest that climate change may bring more bad news than good, as drought and disturbance increase stresses on tree growth.

*PDF of presentation available on meeting website.*

*Jeremy Littell, University of Washington, “Fire and Ecological Disturbance in a Warmer Climate.”*

Fire and insect attacks are a natural part of the disturbance regime of Pacific Northwest forests. However, results of various studies show nonlinear increases in the area of forest burned and insect mortality as a result of climate change. A warmer climate may lead to unprecedented rates of change.

*PDF of presentation available on meeting website.*

*Dr. Stephen Schneider, Stanford University, “Are Animals Responding to Human Induced Climate Change?”*

A shift in the northern boundary of bird species has been observed from analysis of annual Audubon Christmas Bird Counts and data on the timing of migratory bird arrival. Being mobile, animal species have the ability to shift their range much more rapidly than plant species, generating concern over the potential disruption of the structure and habitat needs of ecological communities as a result of climate change.

*PDF of presentation available on meeting website.*

*Gordon Smith, Environmental Resources Trust, “Climate Change: Opportunities for Forestry?”*

Opportunities to mitigate greenhouse gas emissions through forest management were presented, including means to reduce current emissions from forestry practices as well as increase emission offsets through enhanced long-term carbon storage.

*PDF of presentation available on meeting website.*

## ***Summary of Afternoon Session***

### ***Panel Discussion***

#### *Moderators:*

Dave Peterson, Research Biologist, U.S. Forest Service Pacific Northwest Research Station

Janice Peterson, Air Resource Management Specialist, USDA Forest Service

#### *Panelists:*

Tom Hinckley, Professor of Forest Resources,

University of Washington College of Forest Resources

Jeremy Littell, Ph.D. Candidate, University of Washington College of Forest Resources,

JISAO/CSES Climate Impacts Group member

Gordon Smith, Ecolands Program Director, Environmental Resources Trust

#### *Purpose and Structure of the Panel Discussion*

During the panel discussion, participants had the opportunity to question panelists about their presentations given during the morning session. The afternoon session lasted from 1:45-3:00. The panel discussion had an open question and answer format.

#### *Panel Discussion Summary*

*Question:* Bark Beetle outbreak has been observed throughout California. What effect do you expect insect outbreak to have in Washington, especially east of the Cascades? What opportunities are there for mitigation?

*Jeremy Littell:* With such an extensive area of forest already impacted by insect outbreak, there are limited management options.

*Tom Hinckley:* On the east side of the Cascades, the Yakama Nation has begun actively managing their forest stands by thinning to mitigate fire and insect outbreak. Neither bringing fire back to the forest nor thinning are very feasible approaches for public agencies managing large areas of forested land. The Yakama Nation has been successful by using thinning as a means to bring employment opportunities to their community members.

*Question:* What does that say for our wilderness areas if you suggest that we have to manage our forests? Will we have no wilderness left?

*Tom Hinckley:* It is important to recognize that there is a range of management, from light to heavy. After 80-100 years of fire suppression, we have changed the condition of our forests, and management may be needed. This creates a paradox. For example, the National Park Service at Mt. Rainier National Park cut 150,000 trees to preserve the alpine meadows. In 50 years, without this management taking place, the meadows will become forested.

*Jeremy Littell:* Wilderness areas, especially at high elevations, are likely to see strong climate impacts. What is done will depend on the mandate for each land agency.

*Question:* How can we expect invasive species to respond to climate change? Will ecosystems become more easily invaded by exotic species?

*Tom Hinckley:* There is limited data available. Studies have shown an increased growth response of invasive species to elevated carbon dioxide levels, as opposed to native species. However, many of these studies have not taken into account the effects of increased temperatures.

*Dave Peterson:* Grasses are expected to do well in the future. Exotic grasses are often used in restoration after fires, and with grasses of subtropical and/or tropical origins are expected to be more competitive under warmer conditions.

### ***Open Discussion***

Following the question and answer period, the remainder of the afternoon session was dedicated to an open discussion involving all of the participants and panelists in the forestry breakout group. The purpose of the discussion was to provide a forum for all stakeholders present to evaluate how the forestry sector can best prepare for and adapt to climate change. Specifically, panelists and participants were asked to reflect on the day's presentations and consider the following questions:

- What concerns do we have for the forestry sector based on the predicted climate impacts?
- How do we adapt for climate change?
- What barriers exist to preparation and adaptation?
- How critical is it to act now, and how aggressive should we be?

The wide range of stakeholder participants in the forestry sector breakout session, including members of the timber industry, environmental/conservation organizations, and forest managers from regional governmental agencies, provided for a thoughtful discussion highlighting the range of values forests provide. Overall, participants agreed that we must seek ways to retain functional forest ecosystems on the landscape, though stakeholders expressed a diversity of opinions on the best approach. Stakeholders voiced concerns and recommended appropriate actions for how to best confront current threats to regional forests due to habitat fragmentation and encroaching development, as well as how to manage forests for fire and insect outbreak, increasing dangers due to climate change.

Limiting development on forest lands was a clear priority for sector participants. Encroaching development threatens to consume the forested areas that remain in the region

and remarkably change the character of rural areas in Washington State. Participants suggested that we should aim to develop markets for ecosystem services, such as water quality and biodiversity, which encourage private landowners to retain their forestlands. It was suggested that communities and land trust organizations work to purchase forestland, or at best the development rights to forested areas. These transactions have been common in King County, but the rest of the state is also at risk, and these mechanisms need further attention in other counties. Maintaining forestland in Washington will depend on creating economic incentives for landowners to retain their forests.

Discussion about how forested areas should be managed produced a range of opinions. Several participants from local environmental groups felt strongly that the rotation length for actively managed forests should be lengthened to increase ecosystem services and habitat quality. This view was contrasted by the perspective of timber industry participants, which highlighted the trade-off of lengthened rotations. If the supply of timber in the region is reduced, by increasing the rotation time, the timber needs of the area will be met by importing wood. Bringing in wood products from other regions not only means more fossil fuels are burned for transport, but wood products may come from regions where forests are severely threatened. For small landowners, a longer rotation time would make it more difficult to generate the revenue needed to maintain their lands as working forests rather than converting them to non-forest uses.

Fire and insect outbreak continue to present a serious threat to forests east of the Cascades and present an increasing threat to west side forests, as climate change increases temperatures and reduces water availability in the future. Several participants expressed concern about how we manage to prevent large forest fires. Panelist Tom Hinckley indicated that a spectrum of fire management approaches exist, from natural to active, and we need more information to elucidate the tradeoff between thinning to manage fire and assuming the risk of fire to return systems to a more natural fire regime. Participants expressed the need to develop long-term management plans to increase the resilience of forest ecosystems as climate changes. Several recommendations for long-term management were proposed, including maintaining genetic diversity to protect against seedling vulnerability, slowly and carefully shifting to rotations of species better adapted to future climate, and developing monitoring protocols for detecting effects of climate change on ecosystems.

Forests are expected to be impacted by climate change, but as identified in this discussion, forests can also have a role impacting the climate by providing a renewable energy source and increasing carbon storage. The cost of thinning as a fire management approach has long been a barrier to its widespread implementation. Several participants advocated in favor of expanding “biorefinery” opportunities where woody biomass would be utilized to generate a carbon neutral fuel and economic revenue. Encouraging the use of wood products as a building material was suggested to have a twofold climate benefit. First, the use of wood products over other energy intensive building materials such as steel and concrete reduces fossil fuel emissions. Second, building with wood provides an effective means of long-term carbon storage.

Concerns and recommendations presented by participants of the forestry sector breakout session highlighted the challenges faced throughout Washington State to preserve and effectively manage forested lands. Clearly no single management approach or action will serve to confront the threat presented to forest ecosystems by climate change; this general discussion emphasized the utility of encouraging communication among stakeholders to develop effective strategies.

### ***Summary of Report to Plenary***

Each breakout group was charged with identifying three top priorities for their sector to prepare for and adapt to climate change based on conclusions generated during the morning and afternoon sessions. These priorities were presented by the panel moderator from each breakout group in a plenary session in the afternoon moderated by Jay Manning, director of the Washington State Department of Ecology. The summary report to the plenary session provided an opportunity for all participants to be informed of the conclusions generated in all of the breakout group sessions. Dave Peterson, moderator of the forestry sector breakout session, presented the breakout group's top priorities to the plenary session.

Peterson began by stating the motivating principle established by the breakout group: forest ecosystems provide a wide range of values, and forest management must aim to maintain functional forest ecosystems. Based on conclusions generated from the forestry sector's general discussion, Peterson presented the following three top priorities for the forestry sector:

- Retain as much forestland as possible. Forestland that currently exists needs to be maintained, and new ways to increase forest area need to be sought. This effort will require enhanced incentives for forest retention and can be achieved through developing policy and market driven means to make keeping land forested more economically feasible for landowners. By retaining forests, carbon stored in the terrestrial ecosystem is increased, mitigating greenhouse gas emissions.
- Manage forest ecosystems for resilience. As climate change increases the risk of fire and insect disturbance, management will become necessary. Management activities will range from passive to active and will depend on the goals set by individual landowners for a given forest type. For example, old growth forests may be considered a biological and cultural legacy where active management is inappropriate.
- Improve links between science and management. The ability to build flexibility into the management and policy strategies for forest ecosystems will depend on utilizing available and future science as the basis for decision making. Monitoring is needed now to provide the basis for understanding how to manage our forest ecosystems in the face of climatic change.